Journal of the Amateur Photographic Society of Madras.

Vol. 3.—No. 7. Price As. 8.

June, 1897.

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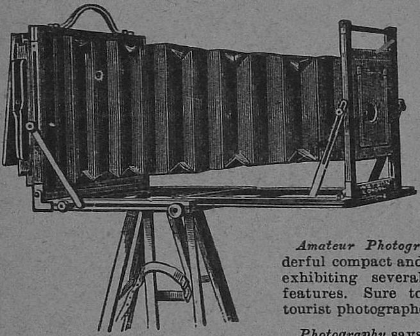

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	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Camera and three double slides	9 12 0	10 0 0	12 5 0	14 0 0	16 12 6	21 0 0
Rapid Rectilinear Lens with Iris diaphragm	4 0 0	4 10 0	5 0 0	6 15 0	8 15 0	11 10 0
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$\frac{1}{2}$-plate and $7\frac{1}{2}$ x 5	$8\frac{1}{2}$ x $6\frac{1}{2}$	10 x 8	12 x 10	15 x 12
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Brass binding extra—recommended for India.				
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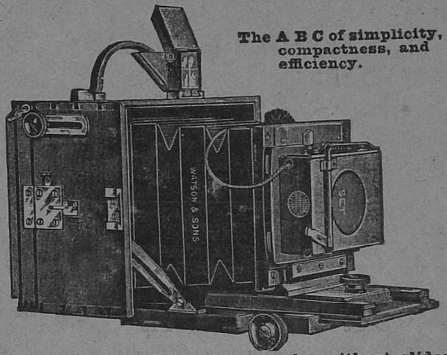

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Watson's rapid rectilinear lens, with iris diaphragm	2 17 6	3 2 6	4 0 0
Exposure shutter	1 0 0	1 0 0	1 0 0
Finder	0 10 6	0 10 6	0 10 6
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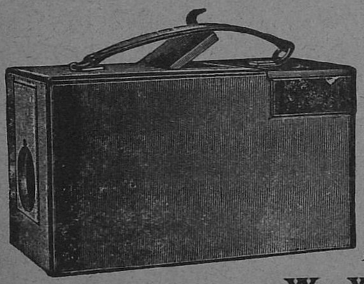

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Finest quality, round corners, brass springs—

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Pyro and Quinol	...	...	per bottle ...	0	10
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Do.	...	...	15 „ ...	2	8
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Pyrogallic acid	...	...	... per oz. ...	1	10
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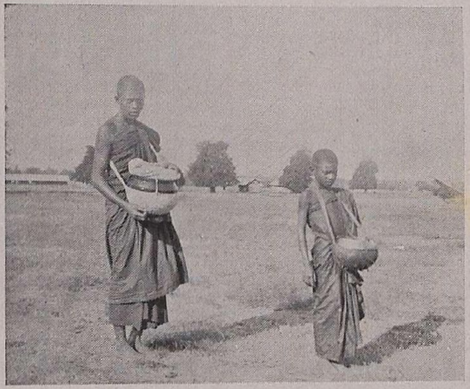

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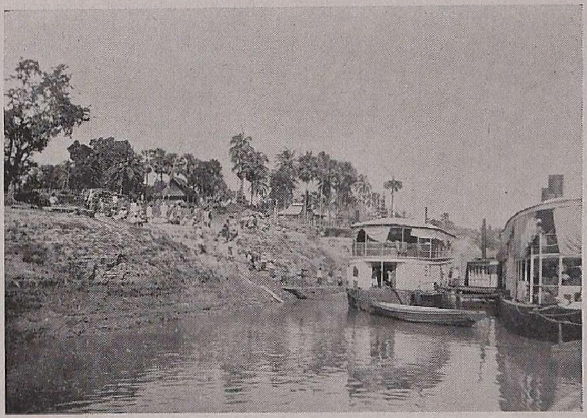

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VIEWS IN BURMAH.

Processed by Thacker, Spink & Co., Calcutta.

Vol. III. No. 7. **June, 1897.**

Journal of the Amateur Photographic Society of Madras.

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EDITORIAL NOTES.

WE notice a Syndicate has been formed for exploiting a new portable lime-light. The principal object of the invention, which is patented, is the construction of a complete and safe apparatus for the continuous and automatic manufacture of oxygen and other gas required for producing lime-light without the use of cylinders, storage bags or other holders. It is claimed for the invention—(1) That the dangerous system of using compressed gas is entirely dispensed with. (2) That the apparatus is so simple that little or no instruction in its use is necessary. (3) That the gases for the production of lime-light are readily, safely and continuously manufactured, that the lime-light can be obtained within five minutes of starting the apparatus. (4) That the apparatus is essentially portable, being contained in a box 14 × 12 × 9″ weighing about 20 lbs. and can be carried without any restrictions attaching to compressed gas cylinders. (5) That the material for producing oxygen gas can be sent safely by post, thus rendering it easily obtainable in the most remote districts. These claims are vouched for by Mr. E. D. Richardson Blundstone, Mr. C. W. Locke and Messrs. R. and G. Beck, Limited, so that it would appear that the days of the old cumbersome bags and dangerous cylinders are numbered. The want of a good lime-light is one of very long standing in India and the introduction of this apparatus should prove a great boon to Lanternists in this country. The address of the company is "The Portable Lime-Light Syndicate, 98, Leadenhall Street, London, E.C."

KODAK NEWS.—Our readers will be interested to learn that the Eastman Photographic Materials Co., Limited, has announced a great international amateur photographic competition in which 130 prizes to the total value of £598-15 are offered. The competition, and the exhibition which is to be held in London are in the able hands of George Davison, and the judging will be undertaken by Messrs.

Maurice Bucquet, Andrew Pringle, and H. P. Robinson. The competition is divided in five classes, and the prizes range in value from thirty guineas to fifteen shillings. Full particulars will be sent from any of the depôts of the Eastman Company.

ANIMATED PHOTOGRAPHY.—A glance through the advertisement columns of the *Optical Magic Lantern Journal* will show the increasing amount of attention that is being given to this fascinating branch of Photography. Apparatus for photographing printing, and exhibiting animated photographs can now be purchased complete for £35, and a camera complete for £20. These prices bring them within the reach of many Indian Amateurs, who would prefer photographing events as they occur to obtaining mere still-representations of a subject.

BACK-COATED PLATES.—*Photography* says that for a long time the photographic world has been expecting some up-to-date plate maker to meet a very generally-felt desire by supplying dry plates already backed. The "Long-expected" has come at last. Users will now be spared the somewhat messy operation and will probably produce better negatives. An idea seems to have gained ground that backed plates are only useful for out-door work; this is a mistake, backing a plate will never do any harm but its benefits will be most felt when the contrast between light and dark places in juxta-position is great. For interiors, when light comes through windows, doors, etc.; for portraiture, when a white shirt front or white lace comes in juxta-position to some dark material; for copying, when it is important to preserve the finest lines; for landscapes where there is either a sky background or a reflecting surface of water; and in numberless other instances, the value of a backed plate will be found very great indeed.

SOME IMPRESSIONS OF BURMA.

By Mah Mai.

The Editor has asked me to tell his readers some of my impressions of Burma. They are numerous and pleasant after nearly five years spent in one of the most picturesque and favourite districts—Sagaing on the Irrawaddy near Mandalay. Here I took up photography and had all round me the most fascinating subjects. The country is just made for the artist or photographer. The white pagodas dotted about the hill sides relieve the green and brown of the hills; the rich brown colored wooden Hpoongyee Kyoungs, or Monasteries, always seem placed just where they should be with a background of waving branches. The bamboo and mat villages are shaded by magnificent tamarind trees and the Burman does not know the "attention"! attitude of the native of India, but stands in some easy, natural position, as in (Fig. 1) where the youths of the Yellow Robe have grouped themselves. If only the brilliant colouring could be reproduced! What could be more effective than the bright orange-coloured robe of the Hpongyee or Monk, when he is going on his morning begging round (Fig. 2) seen down a dim vista of trees, or the pinks, reds, greens, blues, in fact every colour imaginable in which the Burman Loogallay and Mingallay, men and maidens, love to clothe themselves. All this however is not to be seen in any striking way in Rangoon, for the Burman of Lower Burma scorns all manual labour and the streets of Rangoon are filled with the familiar Madrassie coolie, but rather sleeker in appearance than here, as if rice and pay were plentiful.

The two golden pagodas of Syriam and Rangoon are the first distinctly Burman sight going up the flat banked Rangoon river; and then darting about among the shipping are the funny two-tailed sampans with the rower standing up. Though decently clad, on nearer inspection the boatman is seen to be no Burman but a native of India, and you may spend a whole day in Rangoon and scarcely see a Burman on foot. *He* may be seen in his gay silk petticoat "putso" and head dress, another brilliant piece of silk colouring, driving a ticca gharri with its diminutive pony looking as if it were a case of interference for the P.C.A. Society, but the atom goes light heartedly along and seems to think nothing of the gigantic looking load behind. The Burmese *She*, who fills such a conspicuous part in the life over there, may be seen perhaps carrying a basket of fruit to sell, and *he* and *she* are very difficult at first to distinguish as his face is hairless, and both wear a petticoat and loose white jacket, and tie the hair in a knot on the top of the head; but the woman is usually bare-headed and the man wears his gay handkerchief.

It is not till one gets to Kemendine, a suburb of Rangoon, reached by a quite metropolitan train in its briskness of stopping and departure along its 10 miles of track that one sees the Burman in any numbers. That station is quite a gay sight, as a brilliantly clad crowd pours out of and into the train. The Shway Dagone has of course to be visited. It stands on an artificial hill and dominates Rangoon. As the shades of evening are falling, the climb up the steep steps, after passing through the entrance guarded by its enormous Chindees or tigers, with their rows of formidable-looking teeth, is somewhat alarming, so slippery have they become from the barefooted pilgrimages up and down. But once at the top it is a very pretty sight to see the merry little maidens lighting tapers at all the shrines, the dim light showing up mysterious recesses, and outside just enough day-light remains to admire the wood carvings and kneeling stone elephants, but to miss the tawdriness and unfinish that seem inseparable from all Eastern decorations.

Burma was described to me as one vast paddy swamp and it certainly looks so on leaving Rangoon by the night mail for Mandalay, but on waking up the next morning the scene is changed and one finds oneself in glorious forest scenery. There is plenty of young teak, but all the gigantic trees have long since disappeared from the sides of the railway, but the tall Eng, in leaf so like the teak, and plenty of big jungle trees tower up on both sides. Beyond the forest, the Karen hills show out blue and distant, but all day long the hills are getting bigger and bigger as the Karen turn to the Shan and more and more pagodas are dotted about until one reaches Mandalay and sees the elaborately carved Hpongyee Kyoungs (Fig. 3).

In Mandalay one ought never to go about without a snapshot camera, for the variety of costume and nationalities is wonderful.

The Madrassie "boy" is everywhere and his brother "boy" the Kitmutgar of Northern India; the Sikh with his enormous turban, the tall Pathan with his yards and yards of cloth round his waist falling in innumerable folds till gathered in tightly at each ankle, the dirty Afghan with his ringlets, and the sturdy Goorkha. Then of the Mongolian type of face is the Chinaman with his pigtail and no doubt comfortable, but ungainly, breeches; the Shan in similar breeches, but with a flapping, finely plaited straw hat perched on the top of his puggaree, and striped and highly ornamented bag slung over his shoulders; the rosy cheeked hill Kachin, the women disfigured by having tatooed faces and blackened teeth after marriage, and here of course one sees the Burman in all his glory and crowds of the yellow robed monk with his shaven head and the nun also shaven, but soberly dressed in a pale salmon sort of white, both often telling their beads as they walk along.

The bazaar is worth a visit. Everything imaginable is sold under one roof. It is pleasant to leave the stalls kept by the enterprising Native of India, who pesters and shouts after one, and go to those kept by the calm and smiling, cheroot-in-mouth, pretty Zurbadee maidens, the offspring of Burmese mothers and natives of India. They will chaff in Burmese, Hindustanee, and English, and bargain, but all in the most nonchalant manner. If you like to give 4 annas for a bunch of plantains, well and good, but if you don't somebody else will, and the girls have a joke amongst themselves, smoking the while and leave you to make up your mind.

A trip up the Irrawaddy about the end of January is a feast of colour, the bamboos that clothe the hill sides and the forest trees are changing to yellows and reds, while some are coming out into fresh green leaf and the purple and blue Shan hills are beyond. On the river, too, are curious craft: huge teak and bamboo rafts with a village of huts on each; another raft shining brightly in the sun made out of large earthern jars japanned black; again, a rice boat with its lofty richly carved stern and complicated-looking tackle for its huge sails; and perhaps a racing boat manned by a crowd of kneeling Burmans, paddling with the rapidity of lightning, while a man dances about in the centre, urging them on with cries and cymbals. Besides these native craft are many steamers plying up and down and the arrival of a cargo boat at a village (Fig. 4) is a great and exciting event, for the flat attached to the steamer is a regular bazaar and the villagers crowd on to it to get their weekly supplies.

Moored at night by some village comes the pleasing sound of a "pwè" band. The sounds of the sweet toned gongs and flageolets are not drowned by the deafening clash of bamboo clappers and cymbals and vigorously beaten drums as they are at close quarters. The

Burman dearly loves his "pwè" or play, but it is somewhat prolonged and tedious to our tastes. Yet the clowns are amusing with their mimicry of the invariable Prince and Princess. The Burman idea of grace in dancing is all angles instead of curves, following as closely as possible the motions of marionettes so cleverly manipulated at a marionette "pwè."

In Upper Burma the Burman *does* work, perhaps not very steadily, but heartily and merrily with shouts of laughter. Laughter, not weeping, is the sound one hears going through a village, the children do not seem to know how to cry! Light-heartedness may certainly be said to be the Burmese characteristic, and yet he does not grow fat. A fat Burman is quite a curiosity.

All these pleasant memories I have of Burma and yet with what disgust I heard "the order" for Burma!

TRIUMPHS OF PHOTOGRAPHY.

Science hath many wonders done,
Music hath many conquests won;
But here I offer praise to thee,
Immortal art, PHOTOGRAPHY!

* * * *

Tho' time with cruel hand shall part,
By death, each loving heart from heart,
The mirror'd soul lives constantly
As fixed by thee, PHOTOGRAPHY!

Tho' year by year this earth shall spin,
Thou link'st together kith and kin
In distant homes beyond the sea,
Compassionate PHOTOGRAPHY!

And what would lovers do I pray,
Though parted only for a day,
Could they no solace draw from thee,
Sweet mem'ry's aid, PHOTOGRAPHY!

And 'tis a blessing in disguise,
When exiled under tropic skies,
For Amateurs like you and me
To dabble in PHOTOGRAPHY!

* * * *

It scatters gifts with lavish hand:
It lights a torch in every land:
A Board School may Earth's wonders see
By lantern-slide PHOTOGRAPHY!

It sets a bound to traveller's tales,
And ruthlessly all "fudge" assails:
'Gainst falsehood armed *cap-à-pie*
That knight of truth PHOTOGRAPHY!

The starry worlds and planets new
It gathers up and puts on view,
And the coral kingdoms of the sea
That piercing eye, PHOTOGRAPHY!

It spies the bullet in its flight,
On 'horse in motion' sheds a light,
Canals of Mars' P.W.D.
That lightning art, PHOTOGRAPHY!

Its ultra-microscopic eye
Minutest structures can descry
Hand-maiden of histology
Omniscient PHOTOGRAPHY.

Half-truths, like hypnotism and such,
Prompt now the query of how much
Of truth or humbug there may be
In many-tint PHOTOGRAPHY.

We hear enough, in this our day,
Of Röntgen's "X" tra special ray;
So I in silence may let be
This curious PHOTOGRAPHY.

The Cinematograph at last
Sums up its victories of the past;
Yes! moving pictures we may see,
A product of PHOTOGRAPHY.

* * * *

Thus is its roll of famous deeds
Inscribed that he who runneth reads;
But can a prophet e'en foresee
The *future* of PHOTOGRAPHY?

C. S. M.

OUR HOME LETTER.

Mr. Ruskin has very truly written that "It is most difficult and worthy of the greatest men's greatest efforts to render, as they should be rendered, the simplest of the natural features of the earth, but also, be it remembered, that no man is confined to the simplest, each may look out for himself where he chooses, and it will be strange if he cannot find something hard enough for him." Though these remarks were intended to refer particularly to painting, they are quite as applicable to photography, and I think we should gain much by a careful consideration of what the same writer has said of following out the faithful representation of all objects of historical interest, or of natural beauty existing at the time—representations such as at once aid the advance of the sciences, and keep faithful record of every monument of past ages likely to be swept away in the approaching eras of revolutionary change. When Mr. Ruskin made these observations, he prefaced them by pointing out the very great waste of talent and time which had been made by painters following the style of some particular school, and producing merely "cattle pieces," "fruit pieces," "family pieces," and so forth —"the eternal brown crowns in ditches," as he expresses it, "and the white sails in squalls, and sliced lemons in saucers, and foolish faces in simpers."

"Supposing on the other hand," explains Ruskin, "that painters had separated into two great armies of historians and naturalists. That the first had painted with absolute faithfulness every edifice, every city, every battle field, every scene of the slightest historical interest, and that their companions, according to their several powers, had painted with like fidelity the plants and animals, the natural scenery, and the atmospheric phenomena of every country on the earth—suppose that a faithful and complete record were now in our museums, of every building destroyed by war, by time or innovation, during these last two hundred years—suppose that each recess of every mountain chain of Europe had been penetrated, and its rocks drawn with such accuracy that the geologist's diagrams were no longer necessary—suppose that every tree of the forest had been drawn in its noblest aspect, every beast of the field in its savage life—that all these gatherings were already in our national galleries, and that the painters were labouring happily and earnestly to multiply them, and put such means of knowledge more and more within the reach of the common people—would not that be a more honourable life for them than gaining precarious bread by "bright effects." To this we photographers might add "and mere idle snapshots."

These very pithy and wise words come up with remarkable significance when applied to the present aspect of photography. Of course we cannot speak of what might have been done by photographers two hundred years ago. Our retrospect only allows us to turn back a few pages before we are at the beginning of the book. Nevertheless if we say ten years instead of two hundred, how much valuable work could have been done by the vast army of amateur photographers during that space of time if only their labours had been guided into right channels? Supposing that a systematic record of monuments, buildings, and other erections of specific interest had been made, and the photographs filed away in museums or otherwise for the guidance of future generations. Buildings of historic interest are here to-day, and to-morrow they crumble to dust. A photograph after the lapse of a few years becomes of enormous value. If, too, natural scenery, features of geological interest, characteristic landscapes, and other specific scenes of value had been accumulated, how very much better our position would be. With every year during which these steps are not taken, the loss becomes greater and less remediable.

We are glad to find that a Committee of the British Association is doing all within its power to procure a complete collection of photographs of geological interest representing physical features of every kind in the British Isles. Now also the officials of the British Museum talk of a national survey of the United Kingdom by means of photography, proposing to call together a Committee to be formed from different scientific bodies, to arrange upon what lines the survey can be most advantageously carried out. Whether the survey is extended to India and the Colonies or not, the example ought to be imitated by scientific organizations all over the world. Perhaps the Photographic Society of India may bring this matter seriously before its members, and take steps to employ their leisure towards providing such a permanent collection as shall be of the highest utility to the present, and more particularly to future generations.

A propos of scientific photography there is a curious natural phenomena observed in connection with high prominent mountain peaks, which, when the sun is near the horizon, casts distinct shadows of the clouds behind, a shadow which at times is very pronounced. This occurrence has been known for some time, but with the exception of Pike's Peak and Mount Hood in America, we do not know of any other mountains whose shadows have been photographed.

The colour process of M. Chassagne has been published. Five solutions have been patented which the inventor names as follows :—(1) Shadows albumen, (2) Relief albumen, (3) Blue pigment, (4) Green pigment, (5) Red pigment. The preparation of these solutions is somewhat complicated, and the method of using them is briefly as follows :—Take a print on paper or glass, thoroughly soak it with the shadows albumen. Then wash with relief albumen. Next apply with a brush the blue pigment, and again the shadows albumen. It is then treated with green pigment which is diluted with ten times its volume of the shadows albumen and relief albumen specially prepared. Now relief albumen is once more poured on followed by red pigment diluted with relief albumen, and last of all by shadows albumen again. The print is then supposed to exhibit natural colours. It is really doubtful upon this more detailed evidence whether much can be expected from such an empirical method. Nothing more has been heard yet from the English inventor, Mr. Wallace Bennetto.

MATTHEW SURFACE.

PROCEEDINGS OF THE SOCIETY.

Monthly Meeting held at the Masonic Hall, Mount Road.

Friday, 4th June 1897.

Mr. C. Michie Smith, *President, in the chair.*

PICTURES FOR THE MONTH.

Pictures of "A Horse" were shown by Mr. Willock, Mrs. Leet Palk, Mrs. McNair, Mr. Middlemiss, and H.H. The Eliya Rajah of Travancore. Mr. Middlemiss's picture was considered specially good.

EXHIBITS.

The President showed Plates II. to V. of the Lick Observatory Atlas of the Moon. These fully maintained the standard set by Plate I., which was shown at a former meeting. While these photographs were being examined it was noticed that under certain conditions the craters looked like elevations instead of depressions, and it was found on trial that when the illumination from the lamp fell in the normal direction—that is in the direction in which the sun was shining on the moon—the craters showed their true character, but when the direction of the illumination was reversed the hollows appeared as elevations.

The President also showed a number of photographs of parts of the solar surface taken at the Astro-physical Observatory at Meudon—a branch of the Paris Observatory. These photographs are some of the finest that have ever been taken of the sun showing, as they do, the minutest details of the surface as they are seen in a good telescope under the most favourable conditions. The photographs are taken on specially prepared wet plates sensitive to the same rays of light as those for which the lens is specially corrected—about G in the spectrum. The images are magnified by a secondary lens before falling on the sensitive plate and the exposures are very short.

SPECIAL.

The President having called attention to the recent death of the Maharajah of Vizianagram, it was resolved to place on record the regret with which the Society heard of the death of one who has been a patron of the Society for several years and who had in various ways shown his interest in the working and success of the Society.

NEXT MEETING.

The picture subject for next meeting is "Clouds," and for that in August "A Tamarind Tree."

KEY TO THE ACROSTIC in last issue of the Journal.

F L A S H - L A M **P**
I N C **H**
N I K K **O**
D E V E L O P M E N **T**
E I K **O**
S T I P P L I N **G**
I N D I A - R U B B E **R**
E U R E K **A**
C A **P**
L I T H O - P H O T O G R A P **H**
E A R L **Y**

EXTRACTS.

Photography and its Applications.

BY CAPT. W. DE W. ABNEY.

(*Continued from page 71.*)

Among the many applications of photography to scientific research, none perhaps has been more fruitful than its application to astronomy. Not only has the astronomer who possesses a telescope and all the requisites of an observatory been benefited, but it has enabled anyone, who has any bent to study the heavens, to become an astronomer at will. Setting aside colour, the starry heaven as depicted on a photographic plate is as real as if seen in a telescope, and enables a study to be undertaken at leisure, and without the difficulties encountered by the astronomer such as cold, cloud, and interruption. In the hands of a practical astronomer, a small telescope with a photographic apparatus attached, is little inferior in equipment to the possessors of large telescopes used for eye observation alone. Stars which alone can be rendered visible by the collecting power of telescopes with huge object glasses can be photographed in the small ones, since the main reason of invisibility is the smallness of the radiation of these almost invisible radiations, but time of exposure makes up for the feebleness of radiation, though it fails in an ordinary telescope to create the sensation of light in the eye.

In the slide of stars on the screen, the exposure was prolonged during seven nights, I think, the telescope being capped each day and the exposure resumed each night. I would ask you to think what labour this involves. Firstly, a telescope correctly mounted as regards the meridian; secondly, a clockwork which is so accurate that it will follow the apparent motion of the stars; and thirdly, a small telescope mounted on the main telescope to enable the observer to correct by hand any slight variation due to the clock motion, and to the apparent shifting of the stars due to increased or diminished refraction as they approach to or recede from the horizon. The slide indicates the successful carrying out of a photograph of a part of the southern heavens at the Cape under Dr. Gill. There is a grand array of stars, such as the naked eye cannot see, nor yet any telescope which has been erected in the southern hemisphere. The photograph is a copy of a large photographic print given me by Dr. Gill.

In America they have two of the largest telescopes in the world, and good use they have made of them. The next slides show photographs made by Mr. Barnard at the Lick Observatory, and give portions of the heavens which to the naked eye only present a few stars as visible.

We often have mysterious visitors in the shape of comets, very often invisible to the eye, yet seen in the telescope. I put on the screen what I think may be called the first photographed comet by Dr. Gill with an exposure of many hours. It is a very beautiful object, but I would ask you to note that the stars are no longer round dots but elongated trails. This is due to the fact that the comet has an apparent motion amongst the stars, and that the telescope had to follow the comet and not the stars. I may parenthetically mention that when a telescope follows the motion of the stars for a long time in order that each star may make a dot on the plate, sometimes short lines, instead of dots, due to stars, are found on development. In this way some of what are known as the minor planets can be discovered. These minor planets are getting so common now that they fail to create any great degree of interest.

Comets are visitors of great interest. What their practical utility is is at present unknown, but doubtless it will be discovered. Port wine of such and such a comet year is the nearest approach that I have heard of as indicating mundane utility.

Anyhow, the movements of comets are scientifically interesting, and I put another slide on the screen showing a comet as seen on a certain night, and then the same comet seen the night after.

A comparison of the two indicates that from some cause or another, the comet's tail has been rended into two parts. Without photographs to prove it, such a description might have been doubted.

The interest that attaches to comets is equalled by that which attaches to nebulæ. Clouds of luminous matter appear in the telescope situated in parts of the heavens, often surrounding, like an irregular halo, some central star in it, whose edges, as often as not, are undefined, suggesting a connection between the star and the cloud. These nebulæ are of interest, as they are suggestive of the formation of star worlds from condensation. No eye can draw these nebulæ with the same accuracy as can the rays of light themselves, and in this respect photography has scored a gigantic success.

[Slide shown of Common's photograph of nebula in Orion.]

In this slide we have the first photograph of a nebula, and it was taken by Dr. Common.

[Other slides of nebulæ were shown.]

In depicting planets, photography is yet in its infancy, but I show you three—Jupiter, Saturn, and Mars—the latter of which is very difficult to photograph.

The life history of a world is always a subject of enquiry, and it is probable that in the distant future a good deal will be learnt from a study of the surface of the moon. Already it has been surmised that changes have taken place on that surface within the memory of man, but so long as these changes noted are eye observations, the evidence is not conclusive, owing to the personal errors that might be incurred. On the other hand, a photographic plate has no bias and no error of drawing, and if such photographs as the following are taken from time to time, the telescopic

[Slides of moon shown]

astronomer, or the amateur astronomer who possesses no telescope, will be able to investigate any change that may have occurred. Speculation as to the forces at work on that dry, arid surface which has swallowed up atmosphere and water will thus have a larger field to work upon.

We next come to the services photography has played in connection with our knowledge of the sun. The sun's surface itself has been photographed, and we know that it is not a plain disc, but mottled all over with more or less brilliant flakes of luminous matter, and with depressions in the surface (caused from phenomena which I have not time to discuss now) called sun spots. The sun's surface has for years past been photographed, and the measurements of these spots made. It has been found that they

[Slides of sun and spots shown.]

are most abundant, and cover more of the surface every eleven years or thereabouts, gradually sinking to a minimum between times. That these are interesting is found in the fact that times of abundance of rain and prosperity or otherwise seem to be dependent upon them, and thus have a connection with the well-being of our earth.

Again, outside the sun, as revealed at eclipses, we have a halo or corona, and whether this has any connection with mundane affairs is in the womb of the future. At every total eclipse of the sun these coronas are photographed for record.

[Two slides of corona shown.]

One of the many applications of photography is the registration of the analysis of light emitted from any body. You have already seen how white light can be sorted out in the component colours and photographed. All light may not be the same kind. For instance, sunlight is found to be broken up by black lines in its spectrum which have been proved to have been due to the drinking-up of the missing rays by gases or vapours intervening between us and the sun or at the sun's surface.

So with metals, they emit a few radiations, and no others, and if we photograph these radiations which appear as lines in the spectrum we find that for each metal their situation in the spectrum is different. Hence, if on a photograph of a spectrum we have lines in certain positions, we should know if the light was due to the vapour of any particular metal which we had mapped previously. I cannot enter into this subject at any length, but can only show slides of metallic spectra, and then its application to the light from stars.

[Half-a-dozen slides of metallic spectra and stars spectra here exhibited.]

But I must now come to the application of photography to more mundane work. The eye is a very incorrect observing apparatus for some things, as the impressions formed on the retina have to be translated to the brain, and the mind has to reason out what the impressions mean. A photographic plate, on the other hand, records the impressions (colourless, it is true), but gives the mind ample time to translate them. For instance, any two individuals may not agree about the description of a flash of lightning. The photographic plate tells us at once.

[Photographs of lightning, lent by W. H. Jennings and Col. Evans were here shown.]

You see we can photograph a flash of lightning, and lightning is practically instantaneous—the question arises, can we use such light to photograph instantaneously any phenomena, knowing that we can produce artificial lightning by means of well known pieces of apparatus?

Professor Mach, of Berlin, showed that it was possible to photograph a bullet in its flight, and here we have his photographs taken in a camera. Professor Boys also made the shadow of a bullet in its passage to be utilised, and we have here slides by Professors Mach and Boys to show the results. The Photographs by Professor Boys showing the passage of the bullet through glass are extremely interesting, and in all we see what are really sound waves except in the act of travelling.

Professor Mach also photographed sound waves, and I show two of them—one the motion of a sound wave in a tube, and the other the wave generated by a disc when set in motion.

Various persons have photographed jets of water, and some of these are shown.

For practical utility (in time of war, for instance), photographs from balloons will be of the greatest value, and also for surveying purposes. Mr. Jennings has kindly lent some he took in America.

The action of explosions is one of which we know but little theoretically, but photography may aid science in its investigation, and I place on the screen a slide of the first torpedo explosion ever taken (twenty-five years ago). Your lecturer was the photographer.

Opposed to this we have the possibility of photographing underground, and very interesting and educational this is.

[Slides of underground work by Mr. Burrows were here shown.]

Once more we come to the application to science, and here we have photography used for ethnological purposes by Mr. F. Galton.

[Composite photographs of a brother and sister, of four murderers, of five murderers, of five Baptist ministers, and of a whole family showing typical faces, were shown.]

In the natural history section, the introduction of the telephotographic lens, which is really a means of taking a large-sized image of an object at a distance, has put into the hands of naturalists a means of studying the habits of birds and animals without disturbing them by near approach. Mr. R. B. Lodge has been eminently successful in this kind of work, and I am enabled to show you some of these interesting objects.

[Slides showing cormorants, seagulls, etc., were put on the screen.]

Again, instantaneous photography has enabled one to photograph fish, not in their natural territory, but in tanks, and here we see two jack pike in their native element.

I need only refer to the photographs taken at the Zoo, as they are in every shop window; I have not shown them. The photographs have enabled the artist to correct his drawings in a very marked manner in many instances, no doubt.

Coming to the medical side, I will not put upon the screen slides which in themselves are painful, as they indicate the ills to which flesh is heir, but will only say that in the record of extraordinary cases of disease the photographic records are of the highest importance. I will, however, show you some slides by Mr. Pringle, which illustrate the use of photography in bacteriology. Bacteria are the craze at present, and may be for the future for all I know, but at any rate medical science has established the fact that bacteria are the foundation of many of the diseases to which flesh is heir. They are only to be found by microscopic research, and the eye is saved by the use of the photographic plate, and photographs of typical specimens of the various kinds of bacteria can be circulated amongst medical men, and such bacteria in new cases under them can be recognised by them, though they may not be expert bacteriologists.

Finally, you will see some photographs taken with the X rays, of which we have heard so much lately. [Four slides shown.] It is not a new kind of photography, and probably not new light which impresses the plate. It is probable that it is the old form of light which has been exerted by newly discovered motion in the ether.—*Lecture at the Crystal Palace, published in Photography.*

Cheap Chloride of Gold.

It is not our purpose to dwell upon the so-called chloride of gold purchasable at 1s. or less a tube, the proportion of the precious metal present depending solely upon the elasticity of the conscience of the maker. Pure gold is worth close upon 4*l.* 5*s.* an ounce. The makers of genuine chloride, as has been pointed out in these columns before, guaranteeing seven grains of metal in a fifteen-grain tube of chloride of gold, have to face an original outlay of 1*l.* 19*s.* 8*d.* for the metallic gold in each ounce of the familiar yellow crystals, which is just under 1s. 3*d.* a tube, or 1*d.* a grain. Hence it will be seen that whatever sum a photographer pays beyond 1*d.* a grain is, theoretically, so much loss, provided he knows how to convert gold into chloride, the value of the small amount of acid necessary to dissolve it being virtually infinitesimal. As a matter of fact, according to how, and in what quantities, it is bought, the chloride stands its purchaser in from fifteen to fifty per cent. more than its metallic value.

But a profit shown on paper is not always realisable; let us see whether or no we can have cheap chloride of gold. If we buy fine gold from, say, a jeweller, we cannot get it for 4*l.* 5*s.* an ounce—far from it—for the refiner must be paid for his work, and thus we see a portion of profit lopped off at once; but, if we take a gold coin, say a sovereign, it contains exactly a pound's worth of gold, but, along with it, about nine per cent. of copper, &c. To get rid of this copper it is necessary, first, to dissolve the coin, then to precipitate the gold with ferrous sulphate or with oxalic acid, collect and wash the precipitate, and redissolve. Unless an experienced hand performs this work, there is great probability that an appreciably large proportion of the gold will be entirely lost during the washing operations; it is remarkable in what an extremely finely divided state the metal is precipitated, and the time required for it to settle is, consequently, unusually great. Here, again, there is chance of our paper profit going to the wall, so that, up to the present stage, we cannot be said to have explained how to get cheap chloride of gold, as what we have shown to be gained with one hand is lost with the other.

Is there any other alternative? There is. Whether it is a sufficient one remains to be discussed. We refer to the plan of simply dissolving a gold coin, and using the mixture so obtained, without taking the trouble to remove the impurity, that is to say, mainly copper, which is found in all gold coins, though less in the Australian than the English. The silver in the metal removes itself—it is precipitated. What is now required to be known is whether the presence of the chloride of copper with the chloride of gold has any injurious effect. We made three batches of chloride of gold solution, No. 1 with pure gold, No. 2 with an Australian coin, No. 3 with a coin from the British mint. From each of these we made, under otherwise identical conditions, batches of toning solutions with acetate of soda and with sulphocyanide of ammonium. Choosing sets of prints as near alike as possible, we used each bath in turn for the sets, and found it impossible, after the toning, fixing, and drying, to discover the slightest difference in action between the gold toning and the copper-gold toning solutions. To make assurance doubly sure, we gave a quantity of the copper-gold chloride solution to a gentleman through whose hands a great deal of printing passes, and asked him for a report. He did not perceive anything different in it from any other chloride of gold he had used, and, as a matter of fact, we find that he never uses the gold chloride of the shops, he always makes his own direct from coins. He reckons that, not counting time or establishment working expenses, he at least saves something between 3*s.* and 4*s.* for every sovereign used. In these days of competition this amount is well worth considering, for, as we showed in a recent article, that touching Professional Photographers' Profits, "things are not what they seem."

We may conclude with a little advice as to the mode of making. When the gold is all dissolved, it is desirable to drive off by heat the major portion of the free acid, as, if this be not done, and the acid be neutralised with chalk, the amount of chloride of calcium so introduced may have an effect upon the action of the toning solution. In driving off the acid it is just possible that too much heat may be used, and some of the gold precipitated; but, should this occur, all that is necessary is to dilute the solution, filter, and then weigh the precipitate. The amount of gold in solution must, of course, be reckoned as less than the recognised amount by just so much as there is found to have been thrown down. The precipitate is not always gold, but by heating it to redness all chlorine or oxygen is driven off, and pure metal remains behind, and can then be weighed when cool. The means here shown suggest perhaps the only useful method for the every-day photographer's hands that will enable him to use home-made but cheap chloride of gold.—*The British Journal of Photography.*

HALF-YEARLY COMPETITION,

JUNE 1897.

Subject: AN ARCHITECTURAL STUDY.

No.	Title.	Exhibitor's Name.	Judges' Awards.
1	The Gilded Dragon "Hpoongyee Kyoung."	Mrs. McNAIR.	Certificate of Merit.
2	The Serpent Pagoda ...	Mrs. McNAIR.	
3	Prettily situated Hpoongyee Kyoung ...	Mrs. McNAIR.	
4	Burmese Village Architecture	Mrs. McNAIR.	
5	Revenue Board, Madras.	Mrs. LEET PALK.	
6	St. George's Cathedral, Madras	Surn.-Genl. C. SIBTHORPE.	
7	Architectural Study—Ruins of Kondapilly Fort, Kistna ...	A. S. NAPIER.	
8	Temple Exterior ...	L. PITBLADO.	
9	Temple Interior ...	L. PITBLADO.	
10	The Palace, Bangalore.	L. PITBLADO.	
11	High School, Shiyali ...	E. MAENING.	
12	Clock Tower, Ootacamund	C. S. MIDDLEMISS.	Bronze Medal.

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No.	Title.	Exhibitor's Name.	Judges' Awards.
13	Government House, Madras	General WARDROP.	
14	Adyar Club	General WARDROP.	
15	Chepauk No. 1 ...	General WARDROP.	
16	Do. „ 2 ...	General WARDROP.	
17	Do. „ 3 ...	General WARDROP.	
18	Law Courts ...	General WARDROP.	
	ENLARGEMENTS.		
1	The Shadow of a Lance.	H. A. SULLIVAN.	
2	High Court, Madras ...	Mrs. LEET PALK.	
3	A Portrait	Mrs. McNAIR.	
4	A Portrait	H.H. THE ELIYA RAJAH OF TRAVANCORE.	
	COPY.		
1	Health and Happiness...	C. S. MIDDLEMISS ...	Certificate of Merit.

JUDGES' REMARKS.

An Architectural Study.—The pictures sent in for the half-yearly competition hardly come up to the standard that we might expect. Several of the competitors have interpreted the title "An architectural study" in a very liberal manner and have thought, apparently, that a photograph of any building forms an architectural study. No. 12, to which a bronze medal is awarded, is a piece of careful work but is injured somewhat by the point of the tower reaching to the extreme edge of the plate. Why were the telegraph wires not touched out if they could not be avoided altogether? No. 1, to which a certificate is awarded, is a pretty picture but somewhat spoiled by halation and by a failure to use the swing back. Nos. 3 and 4 show excellent tones, but the marks of the brush in the former ruin the picture while the latter can hardly be classed as an architectural study. No. 5 is taken from an unfortunate stand-point and the failure to use the swing back properly makes it look as if the Chepauk tower were in much greater danger than the ill-fated Museum tower. No. 7 is a good picture of an excellent subject but the print is poor, probably through the use of too much bromide in the development. No. 9 is a capital subject not quite successfully treated. Of course the subject is a very difficult one and requires special conditions of lighting to make it a success. It would have been better if it had been taken on a somewhat smaller scale or else if the outside, which is hopelessly over-exposed, had been excluded. No. 15 must be printed from an excellent negative. The view is well chosen, the lighting is good, and the details ample, but no judge could give an award to such a print on such paper. There may be some subjects that can be safely printed on deeply coloured pink paper but they are few and certainly this is not one of them; the mounting too is capable of improvement.

Enlargements.—The enlargements this time are not so good as some that have been shown on former occasions and do not seem to us to merit any award. No. 1 is certainly the best though there is little in it.

No. 2 is spoiled by the picture filling the whole sheet and by the negative having been taken without making proper use of the swing back—a sadly too common fault—the focussing too is very defective. No. 3 is a good picture but much too flat. No. 4 is in some respects good, but it is completely spoiled by the back-ground which, though on this occasion much better arranged, is quite unsuitable. Three enlargements were forwarded by Surgeon-Major E. P. Youngerman, but unfortunately they were received too late for competition. This is the more to be regretted as they were all of a very high standard of excellency. A "Study of a Head" was one of the best specimens of amateur work that we have seen for some time.

Copies.—Only one copy was submitted and to it a certificate of merit has been awarded. It is a piece of good work somewhat injured by being printed on paper which was not quite fresh. The difficulty of getting really good bromide paper in this country seems to be increasingly great and several of the competitors have suffered from this.

EXHIBITS FOR MAY.

Subject: "A Native Conveyance."

Mrs. E. L. P.—Arrangement and pose excellent; but the background is very faulty and spoils what must otherwise have proved a great success. The printing is a great improvement on previous attempts.

Mrs. S.—No. 1 arrangement good, but the subject occupies the whole extent of the available paper and loses a great deal in effect. No. 2 is the reverse of No. 1, the principal subject being, if anything, a little too small. The bull's head, the man, and the fountain are mixed up in such a way that the eye is prevented from dwelling on the picture. No. 3 is printed too flat. The ornamental work of the car is lost against the chequered background of trees.

C. S.—The "Woman carrying a child" is a good subject, but it is somewhat swamped by the background. The "Straw cart" is a good little picture but overprinted. The "Reckla" is poor technically and pictorially, the negative being full of halation. The trimming of the prints should be done with the help of a heavy trimming glass or of a square. The brown paper centres on the mounts do not suit all classes of pictures and the colour is many shades too dark to harmonize with the prints.

Mrs. D. M. N.—The direct print is very good, as a print and its negative is excellent technically. The background is unfortunately quite unsuitable and the eye wanders about before it can distinguish the subject of the picture from the accessories. The camera has been stood quite square to the subject and one is left to infer that there is a second bull yoked to the cart from the fact that the only visible animal appears to have six legs. In comparison with this the enlarged picture is in these respects vastly superior, but the print is flat from over-exposure and over-development.

R. V., Travancore.—An excellent print, but the trimming is disgraceful.

T. C., Bowringpett.—Nos. 1, 2 and 3,—in all these the pictures are on far too large a scale for the plate; No. 2 is of better tone than Nos. 1 and 3, which are foxy. No. 4 is a good print but the animals have moved. No. 5, the animal, has moved badly. Nos. 6 and 9 are the best of the series, but they are disfigured by flaws in the sky and other parts of the print. In No. 8 the camera has been stood quite square with the subject and the print is disfigured by flaws in the film.

CORRESPONDENCE.

Caution to Lens Purchasers.

A recent experience may be of use to those who are about to purchase a new lens.

Two members of the Society each recently ordered from home a rapid rectilinear lens of a well-known maker for their half-plate cameras; they arrived in due course, and on examination the focal length of both lenses appeared to be 9 inches as near as possible.

The iris diaphragm marks showed the full aperture to be U.S. 4 or F/8; this would mean that the aperture of a 9-inch lens would be $1\frac{1}{8}$ inches, but measurement proved that the largest *possible* aperture was only $\frac{15}{16}$ inch or about F/10; in one lens U.S. 16 was the only correct aperture as marked by the iris pointer, while in the other lens U.S. 32 was the only correct one; the other apertures as marked were some of them larger and some smaller!

We have had to remove all the makers' marks and put new and correct ones in their place.

The writer had a similar case some years ago with a pair of stereo lenses; the apertures in the waterhouse stops were found not only to be of incorrect diameters, but the diameters were not equal and neither were the apertures round.

F. D.

COMPETITIONS.

(Open only to members of the Society.)

SUBJECT FOR MONTHLY COMPETITIONS IN { JULY—*Clouds.* AUGUST—*A Tamarind Tree*

RULES.

1. *Two Special Competitions shall be held, in each year, in addition to a monthly competition.*

2. *The Committee shall select the subjects for the Special Competitions, and notice of the selected subjects shall be announced in the Society's Journal in February and in July of each year. The subject for each monthly competition shall be selected two months in advance by the members present at the monthly meeting, and shall be notified in the next issue of the Society's Journal.*

3. *Pictures, &c., competing for Prizes at the Special Competitions must reach the Secretary by the last day of January and of May, and those competing at the monthly competitions must arrive in time to be shown at the monthly meeting.*

4. *Prizes will consist of Silver and of Bronze Medals, and of Certificates of Merit.*

5. *Not more than one Silver and one Bronze Medal shall be given at each Special Competition, and one Silver and one Bronze Medal may also be given at these competitions for excellence in copying, enlarging, lantern slides, or any other special branch of photography. One Silver and one Bronze Medal shall be awarded half-yearly to the exhibitors who obtain the highest and the next highest marks respectively at the monthly competitions. The number of Certificates of Merit granted at each competition is left to the discretion of the Judges.*

6. *A member may receive only one Silver and one Bronze Medal in the special, and one Silver and one Bronze Medal in the monthly, competitions, held during the same year; but should a member who has been adjudged a medal be disqualified under this rule from receiving it, he shall be given a Special Certificate instead, marked 1st or 2nd Prize.*

7. *A Special Committee of three members shall be appointed Judges by the General Committee to carry out, subject to these Rules, all arrangements connected with the competitions.*

8. *The Special Committee shall be appointed after the Annual General Meeting in January, and shall hold office for one year, and any vacancy occurring will be filled up by the General Committee.*

9. *The Special Committee shall decide upon the merits of the pictures, &c., sent in for competition, and their decision shall be final. The system of judging the monthly exhibits shall be by awarding marks, a record of which shall be kept by the Judges, the marks being totalled and the results declared half-yearly. For this purpose, only the three highest marks awarded at each competition to each competitor shall be recorded, but not the aggregate marks gained by each for a number of exhibits.*

10. *If any member of the Special Committee is a competitor, the General Committee shall appoint a non-competing member to act as Judge at that competition instead of the competing member.*

11. *No exhibit shall compete twice, but pictures, &c., already exhibited elsewhere, may be sent in for the competitions.*

12. *Lantern slides sent in for competition shall be in sets of six, and shall be judged upon the screen.*

13. *The Special Committee shall not award any Prizes or Certificates, unless they consider the exhibits to be worthy of such distinction.*

14. *Each competing exhibit shall be the entire work of the exhibitor, and when sent in shall be accompanied by a Certificate in the annexed form:—*

> *"The (1) Arranging, (2) Exposing, (3) Developing, (4) Retouching (if any), (5) Printing and (6) Trimming and Mounting were done by me without assistance."*
>
> ____________________
>
> *Member, A. P. Socy. of Madras.*

15. *All pictures for the Special Competitions shall be mounted, and may, at the competitor's option, be framed but not glazed. Those for the monthly competitions need not be mounted, but should be trimmed.*

16. *Each competing picture should have a name or title, which should indicate the nature of the subject.*

17. *No competitor shall be allowed to send in more than six pictures to compete for any particular Prize, but the same member may compete in all branches specified in Rule 5.*

18. *The pictures gaining 1st and 2nd Prizes at the half-yearly competitions, and the best pictures sent for the monthly competitions, shall, when practicable, be reproduced in the Society's Journal.*

19. *To give up-country members an opportunity of seeing the competing pictures at the special competitions, the pictures shall be circulated to all members of the Society, not residing in Madras, who apply to see them. As this arrangement can only be carried out by the cordial co-operation of the members themselves, they are expected to forward the pictures without delay to the next member, and to send one of the accompanying post-cards to the Secretary, so that by this means the progress of the pictures may be traced.*

List of Members whose Dark Rooms are available for use by Members of the Madras Amateur Photographic Society.

J. L. VanGeyzel, Dare's Gardens, Chetput.
T. P. S. Nagaratnam, 47, Malayappen Street, Black Town.
E. Maennig, Buckingham House, Tranquebar.
J. Chokanna, Amildar, Bowringpet, Mysore State.

SALE AND EXCHANGE.

For Sale.—A half-plate Improved Simplex Camera, with Taylor, Taylor, and Hobson's R. R. lens fitted with iris diaphragm, 3 double-dark slides and focussing cloth, all in waterproof case. The kit is as good as new, having been used only 3 or 4 times. To go with the above.—3 half plate printing frames, 4 dishes, dropping bottles, 3 glass measures, 100 negative envelopes, Ewing's Hand-book, Wilson's Cyclopedia, Bothamley's Manual. Price—Rs. 2:5. No offers. Apply to Dr. VanGeyzel, Chetput, Madras.

NOTICES.

Members of the Madras Amateur Photographic Society are permitted to use this column free of charge for two insertions of each advertisement—all subsequent insertions of the same being chargeable at 2 annas a line. When an advertisement becomes liable to this charge, it will not be inserted unless a postal order or stamps to the value of the charge are previously sent, addressed to Graves, Cookson and Co., Scottish Press, Mount Road Branch, Madras. Advertisements received up to the 5th of each month will be inserted in the next issue of the Journal; those received after this date will be held over for the subsequent issue.

Subscribers, and others who are not regular dealers may make use of this column for advertisements by paying at the rate of 3 annas a line.

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N.B.—The Journal is issued on the 15th of each month, and is posted free to members of the Madras Amateur Photographic Society.

Entrance Fee, Rs. 5.—Annual Subscription *for Resident Members, Rs. 15; for Up-country Members, Rs. 12. Members joining after 30th June pay Half-year's Subscription.*

Candidates for Election—*should be proposed by one member and seconded by another; and they will be ballotted for at the following meeting.*

Ordinary Meetings—*of the Society are held on the first Friday of each month at 6 p.m. and members are at liberty to introduce visitors.*

Letters to the Editor—*should be addressed care of Messrs. Graves, Cookson & Co., Scottish Press, Mount Road Branch, Madras.*

Letters to the Honorary Secretary—*should be addressed to F. Dunsterville, Esq., Rayapuram, Madras.*

Letters to the Honorary Treasurer and Remittances—*should be addressed V. G. Lynn, Esq., care of Messrs. Best & Co., Madras.*

Communications regarding the issue of the Journal—*should be addressed to the Publishers.*

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